

# Nucleonica Trainers.....

## **Joseph Magill, Ph.D.**

### Education

PhD in Computational Plasma Physics  
University of Glasgow, 1975

### Summary of Experience

Dr. Magill has more than 20 years experience in nuclear science and is the author of four books, more than 150 scientific publications and 10 patents.

Following a Ph.D. in computer simulation of laser driven fusion processes, he took up a position as theoretical physicist with the European Commission. He is one of the pioneers of the field of laser nuclear science in which nuclear reactions are induced by lasers – thereby offering a simple and inexpensive way of studying nuclear processes without a nuclear reactor or particle accelerator. Dr. Magill was a member of the Technical Working group on ADS and is one of the authors of the report: "A European Roadmap for Accelerator Driven Systems for Nuclear Waste Transmutation". He has acted as consultant to the IAEA in Vienna on Partitioning and Transmutation of Nuclear Waste, and coordinated a European benchmark exercise on radiotoxicity of spent nuclear fuel. Dr. Magill is an author on radiochemistry and nuclear chemistry in the Encyclopedia of Life Support Systems or EOLSS, an interdisciplinary encyclopedia sponsored by UNESCO.



He is currently sector head of Advanced Nuclear Studies and action leader for Knowledge Management, Education and Training at the Joint Research Centre in Karlsruhe, Germany. Dr. Magill is also the JRC representative on Education, Training and Knowledge Management working group of the Sustainable Nuclear Energy Technology Platform (SNETP)

He is the originator of Nuclides 2000, Nuclides.net, and the Nucleonica Nuclear Science Portal. Since 2003 he has been responsible for the organisation of nuclear science training courses based on the use of this internet technology. His current activities also include the management of the Karlsruhe Nuclide Chart – and the publication of the latest 7<sup>th</sup> edition.

## **George Lasche, Ph.D.**

### Education

Ph.D. in Applied Science  
University of California, 1983  
Master of Science in Physics and Nuclear Engineering  
Massachusetts Institute of Technology, 1977  
Master of Business Administration  
Long Island University, 1980  
Bachelor of Science  
U.S. Military Academy at West Point, 1969

### Summary of Experience

Dr. George Lasche has more than 20 years experience in nuclear science and is the author of over 30 peer-reviewed scientific publications, conference papers and patents.

He has served as an Associate Professor of Physics at West Point, and as a research associate at Lawrence Livermore National Laboratory, where he conducted research in laser fusion. He was Principal Investigator for four high altitude balloon experiments in Australia and Antarctica to analyze nuclear radiation from Supernova 1987A, and served as a State Department advisor to the UN inspection teams in Iraq in 1991. From 1992 to 1995 he was the Director of the Electronic Warfare Vulnerability Assessment Laboratory, and subsequently the Director of the High Energy Laser Systems Test Facility, both at White Sands Missile Range, New Mexico.



He is currently a member of the technical staff at Sandia National Laboratories, where he was Project Manager for measurement and analysis of the nuclear radiation environment in container ships at sea. He is best known as the author of the "Cambio" nuclear spectral file translation and analysis software, which is now in use by over 600 analysts worldwide, and has been integrated into the Nucleonica web site. He is the technical chair for the ANSI N42.42 standard on nuclear data file formats, now under revision, and is currently conducting research in applied methods of spectral data analysis for the interdiction of illicit nuclear traffic. He is also serving as a Triage and Secondary Reachback Analyst to assist front line officers with resolution of possible nuclear terrorism activities.

## **Mustafa Çağatay TUFAN, Ph.D**

### Education

PhD in Nuclear Physics  
Ondokuz Mayıs University, Samsun, TÜRKİYE, 2007

### Summay of Experience

Dr. Tufan started his master course in 1998 and has occupied a Research Assistant position at the department of Physics in the university of Ondokuz Mayıs up to 2009. After his Ph.D. he became an Assistant Professor at the same university. He worked at the Institute of Transuranium Elements between 2006 and 2007 as a Seconded National Expert.

His research interest is interaction of charged particles, especially the theoretical calculations of Stopping Power and Range. He has several papers on this subject, and coded a computer program which calculates Range and Stopping Power in Nucleonica.

He lectures Nuclear and Particle Physics, General Physics, Modern Physics and Computer Programming at the university. He currently has several master students and is one of the responsible persons for constructing the Environmental Radioactivity Laboratory in Ondokuz Mayıs University.



## **Verena Kleinrath**

Verena Kleinrath is a young nuclear physicist from Austria. She graduated from Vienna University of Technology specializing in nuclear and particle physics in summer 2010. Her main research interests include radiation detection and nuclear security.

Throughout the last year of her master studies she worked with the Nucleonica team in Karlsruhe, doing her thesis on the application of Nucleonica tools onto realistic nuclear security issues. The project focused on the prevention of illicit trafficking of nuclear material and included extensive gamma spectrometric experiments that could also be used to validate the Gamma Spectrum Generator and easy Monte Carlo tools. She could present her results at the International Youth Nuclear Congress in South Africa and the IEEE Nuclear Science Symposium in the US.

During her time at the ITU, Verena also had the chance to support theNucleonica team with the training courses, the gamma library module and the implementation of a nuclide identification program (WESPA) into the nuclear science web portal.

Currently she is pursuing her PhD in nuclear physics and working as a scientist in the Austrian Competence Center for Tribology, where she is investigating non-equilibrium thermodynamics of friction, wear and corrosion using thin layer activation.



## **Rolf Arlt, PhD**

### Education

PhD in Nuclear Physics  
Technical University of Dresden, 1976

### Summary of Experience

Dr. Arlt has more than 40 years experience in nuclear science and applications and is the author of more than 250 scientific-technical publications in this field.

With a PhD in Physics (nuclear spectrometry of short lived radioisotopes produced at the synchrocyclotron in Dubna and absolute fission cross section measurements) he worked at the Technical University of Dresden.

In 1983 Dr. Arlt received an offer to join the Department of Safeguards of the International Atomic Energy Agency in Vienna. In the subsequent decades he worked in the field of development and implementation of new methods for nuclear safeguards and nuclear security. He was also designated Safeguards inspector in several IAEA Member States, where he amongst others supported the development and implementation of gamma spectrometric methods and passive neutron assay for the verification of spent fuel. He has pioneered the introduction of spectrometric CdZnTe detectors coupled to a miniature Multi Channel Analyzer, developed for the IAEA and Euratom under the German Support Programme.

After his retirement he continued to work for the IAEA as Cost Free Expert in the field of Nuclear Security, supported by Germany. He contributed with instruments and procedures for the radiological security of major public events (the 2004 Olympic Summer games in Athens, the 2006 Soccer World Championship in Germany, transferring experience and lesson learned with respect to radiological security to other major public events such as the 2007 Pan American Games in Rio de Janeiro and the 2008 Olympic Summer Games in Beijing).

Recently, after retiring from the IAEA, he contributed with lectures on gamma spectrometry and isotope identification related to nuclear security in Nucleonica nuclear science training courses based on the use of internet technology, developed at the JRC-Karlsruhe.

